**ATTACHMENT J2**

# Luke AFB Natural Gas Distribution System

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# J2 Luke AFB Natural Gas Distribution System

## J2.1 Luke AFB Overview

### J2.1.1 Description

Luke Air Force Base (LAFB) is an active military installation located within the city limits of Glendale, Arizona and 9 miles from its center. The base is approximately 15 miles west of Phoenix. LAFB is accessible from Interstate Highways 10 and 17. The base host unit is the 56th Fighter Wing (56FW). Other LAFB tenants include:

- 944th Fighter Wing (US Air Force Reserves)
- Detachment 1, Air Combat Command Training Support Squadron
- Detachment 12, 372nd Training Squadron
- 607th Air Control Squadron
- Area Defense Counsel
- Air Force Audit Agency
- Air Force Office of Special Investigations
- Defense Reutilization and Marketing Office
- Defense Accounting Office

### J2.1.2 Installation Profile

LAFB owns 2,627 acres and occupies another 1,730 acres in easement. In addition, the base also has the use of the 2.7 million-acre Barry M. Goldwater Range located southwest of LAFB. LAFB proper contains 356 buildings excluding housing with a total of 3,234,109 square feet. LAFB Military Family Housing (MFH) provides 841 units with a total of 1,433,882 square feet. LAFB has two runways; the primary runway is 10,000 feet by 150 feet while the parallel runway is 9,910 feet by 150 feet.

In 1940, a US Army representative was sent to Arizona to find a site for an Army Air Corps training field for advanced training in conventional fighter aircraft. The City of Phoenix and the federal government entered into an agreement in March 1941 to lease 1,440 acres of land for $1 per year. The training center was named Luke Field, and the first class of fighter aircraft training students arrived in June 1941.

During World War II, Luke Field was the largest fighter training base in the Army Air Corps, graduating more than 12,000 fighter pilots and earning the nickname "Home of the Fighter Pilot." Students progressed from flying the P-51 Mustang to the F-84 Thunderstreak jet. The Thunderbirds, the official Air Force aerial demonstration team, was formed at Luke

AFB in 1953. In July 1958, the base was transferred from Air Training Command to Tactical Air Command.

In 1969, the 58th Fighter Wing was activated at LAFB. In 1971, tactical air training resumed with pilots using the F-4C Phantom II, F-100, A-7, F-4, and F-104. By 1982, the F-16 Fighting Falcon was being flown at LAFB. In 1994, the 58th Fighter Wing was replaced with 56th Fighter Wing as part of the Air Force Heritage Program. The 56th Fighter Wing is one of the most highly decorated units in the Air Force.

Today, LAFB is the most diversified training center in the Air Education and Training Command (AETC), providing technical, medical, field, and flight training utilizing approximately 190 F-16 aircraft for the training of approximately 1,000 students annually. Annual sorties flown reach approximately 36,000.

The LAFB 2000 General Plan states that the total daily working population is 5,400 active duty military, 1,000 military reservists, 12,300 military family members, 1,000 military students annually and 1,300 civilian employees.

### J2.1.3 Mission

The mission of the 56FW is to produce the world's finest F-16 fighter pilots for the United States and Allied Armed Forces. The 56FW is the host command under AETC's 19th Air Force. The wing provides command guidance and operational control of the 56th Operations Group, 56th Maintenance Group, 56th Mission Support Group, and 56th Medical Group.

# J2.2 Natural Gas Distribution System Description

## J2.2.1 Natural Gas Distribution System Fixed Equipment Inventory

The LAFB natural gas distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to, pipelines, valves, regulators, and meters. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the natural gas distribution system privatization are those sections of pipe, regulators, and meters owned by Southwest Gas Corporation (SWG) which include the following:

1. The 6-inch steel main that runs along the west side of Litchfield Road from Northern Avenue to Super Sabre Street.
2. The 4-inch steel line that runs from the 6-inch steel main along Litchfield Road to the chilled water plant (Bldg. 547).

In addition, all MFH areas east of Kachina Road and south of Glendale Avenue that belong to the Air Force are specifically excluded from natural gas distribution system privatization.

See Exhibit B, Section J41 of the Right of Way Document for information regarding specific points of demarcation for the natural gas distribution system at LAFB.

### J2.2.1.1 Description

Natural gas is supplied to LAFB at three separate locations by 175 pound per square inch gauge (psig) gas mains owned by SWG. The natural gas commodity is also currently supplied by SWG, and SWG odorizes the natural gas prior to entering the base at this point. The main base (west of Litchfield Road), Base Exchange, Commissary, and MFH areas (east of Litchfield Road) are supplied from the east at the Main Base Metering Station located near the intersection of 139th Drive and Phantom Street. Natural gas at this point is reduced to a base service pressure of 20 psig. SWG owns the piping and equipment in the Main Base Metering Station up to and including the cutoff valve downstream of the 6-inch pressure reducer. The piping and equipment downstream of this valve is owned by the Air Force. A separate regulator station, used for the chilled water plant, is co-located with the Main Base Metering station. The meter, however, is located at the chilled water plant. SWG owns the regulator station and 4-inch line leading to the plant, and up to and including the meter.

At the second gas entry point, natural gas is supplied to the 56th Support Center and Base Hospital area from a large valve vault. The piping up to and including the shutoff valve downstream of the meter is owned by SWG. SWG odorizes the natural gas prior to entering the base at this point. The vault is located just east of Litchfield Road by the parking lot near Building 1159 and is owned by the Air Force. The gas meters are located at the respective buildings. A 4-inch line from the vault serves this area.

The wastewater treatment plant receives gas at a third gas entry point through a metering station owned by SWG at the treatment plant through a ¾-inch line. Natural gas inlet pressure at this location is 15 psig and delivered at 2 psig. SWG odorizes the natural gas prior to entering the base at this point.

Overall, the natural gas distribution system at LAFB is in good condition. The natural gas piping on the main base is almost entirely polyethylene (PE) with tracer wire installed throughout. The natural gas distribution piping throughout all of LAFB is buried at depths between 2 and 3 feet.

There is no physical on-base production of gas or natural gas wells. The meters owned by the Air Force are used for billing purposes. The Air Force-owned distribution system consists of approximately 72,535 linear feet of underground piping. The majority of the piping is less than 20 years old, with some nearly 50 years old.

Natural gas is used primarily for space heating purposes such as use of hot water, low-pressure steam and gas furnaces. Approximately 70% of all buildings on base (154) utilize natural gas. There are 124 boilers on base that utilize natural gas. Numerous service regulators reduce the pressure of gas from 20 psig prior to entering the buildings. Take-offs from the LAFB G-6 tabs indicate that approximately 80 percent of the system piping to be privatized is PE and the remaining 20 percent is carbon steel. The carbon steel sections were installed in the late 1950s, and PE piping has been installed since the 1980s through the present. The steel lines considered for privatization include a cathodic protection system. These steel lines are located west of Kachina Road in the MFH area.

The condition of the pipe cannot be determined without excavation. However, the base utility engineer indicated the natural gas distribution system on the main base is in good condition, with no pressure problems and no leaks within the past several years.

No code violations were observed during the site visit. However, most of the gas regulators are past the 15-year recommended service life. The steel pipe diameter ranges from 6 inches to 1 ¼ inch, and the PE piping diameter ranges from 6 inches to 3/4 inch. Each building receiving natural gas has at least one regulator, and 50 buildings have gas meters.

### J2.2.1.2 Inventory

**Table 1** provides a general listing of the major fixed assets for the LAFB natural gas distribution system included in the sale.

TABLE 1
Fixed Inventory
*Natural Gas Distribution System Luke AFB*

| Item | Size (in.) | Quantity | Unit | Approximate Year of Construction |
|---|---|---|---|---|
| **Steel Gas Pipe – Housing** | 1 | 6,200 | LF | 1957 |
| **Steel Gas Pipe – Housing** | 1.25 | 6,375 | LF | 1957 |
| **Steel Gas Pipe – Housing** | 1.5 | 1,400 | LF | 1957 |
| **Steel Gas Cocks – Housing** | 1 | 162 | EA | 1957 |
| **Regulators – Housing** | N/A | 162 | EA | 1957 |
| **Steel Plug Valve – Housing** | 1.25 | 4 | EA | 1957 |
| **Steel Plug Valve – Housing** | 1.5 | 1 | EA | 1957 |
| **Steel Plug Valve – Housing** | 2 | 1 | EA | 1957 |
| **Steel Plug Valve – Housing** | 3 | 2 | EA | 1957 |
| **Steel Plug Valve – Housing** | 6 | 1 | EA | 1957 |
| **Anodes – Graphite – Housing** | 3” x 60” | 13 | EA | 1984 |
| **Rectifiers – Housing** | N/A | 2 | EA | 2001 |
| **PE Gas Pipe** | 0.75 | 8,580 | LF | 1988 |
| **PE Gas Pipe** | 0.75 | 2,000 | LF | 1998 |
| **PE Gas Pipe** | 1 | 7,770 | LF | 1988 |
| **PE Gas Pipe** | 1.5 | 4,250 | LF | 1988 |
| **PE Gas Pipe** | 2 | 21,860 | LF | 1988 |
| **PE Gas Pipe** | 3 | 11,550 | LF | 1988 |
| **PE Gas Pipe** | 4 | 1,800 | LF | 1988 |
| **PE Gas Pipe** | 6 | 750 | LF | 1988 |
| **PE Ball Valves** | 1 | 75 | EA | 1988 |
| **PE Ball Valves** | 1.5 | 37 | EA | 1988 |
| **PE Ball Valves** | 2 | 49 | EA | 1988 |
| **PE Ball Valves** | 3 | 19 | EA | 1988 |
| **PE Ball Valves** | 4 | 7 | EA | 1988 |
| **PE Ball Valves** | 6 | 2 | EA | 1988 |
| **Steel Gas Cocks** | 1 | 154 | EA | 1980 |
| **Regulators** | N/A | 154 | EA | 1980 |
| **Meters** | N/A | 50 | EA | 1980 |
| **Natural Gas Vault** | 10’x15’x9’ | 1 | EA | 1960 |

| Item | Size (in.) | Quantity | Unit | Approximate Year of Construction |
|---|---|---|---|---|
| **Natural Gas Vault** | 3'x2.5'x4' | 3 | EA | 1960 |
| **Gas Filter** | 2 | 3 | EA | 1960 |

Notes:
PE = Polyethylene
LF = Linear Feet
EA = Each
IN = Inches
PSI = Pounds per Square Inch

## J2.2.2 Natural Gas Distribution System Non-Fixed Equipment and Specialized Tools

**Table 2** lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
*Natural Gas Distribution System Luke AFB*

| Qty | Item | Make/Model | Description | Remarks |
|---|---|---|---|---|
| None | | | | |

TABLE 3
Specialized Vehicles and Tools
*Natural Gas Distribution System Luke AFB*

| Description | Quantity | Location | Maker |
|---|---|---|---|
| Electrofusion Machine | 1 | Shop | |

## J2.2.3 Natural Gas Distribution System Manuals, Drawings, and Records

**Table 4** lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
*Natural Gas Distribution System Luke AFB*

| Qty | Item | Description | Remarks |
|---|---|---|---|
| 1 | Luke AFB G-Tabs | Natural Gas Distribution System | |
| 1 | Luke AFB Cathodic Protection Map | Natural Gas Cathodic Protection System | |

# J2.3 Specific Service Requirements

The service requirements for the LAFB natural gas distribution system is as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the LAFB natural gas distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

None

# J2.4 Current Service Arrangement

- ***Provider Name –*** Southwest Gas Corporation – Southwest Gas conveys all the natural gas at LAFB.
- ***Average Usage –*** 116,422 KCF/year (Based on FY2003).
- ***Annual Usage Fluctuations***: High Month Consumption-16,650 KCF, Low Month Consumption-5,120 KCF

# J2.5 Secondary Metering

## J2.5.1 Existing Secondary Meters

**Table 5** provides a listing of the existing (at the time of contract award) secondary meters that will be sold to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3 and J2.6 below.

TABLE 5
Existing Secondary Meters
*Natural Gas Distribution System Luke AFB*

| Meter Location | Meter Description |
|---|---|
| Building 161 (Non-Commissioned Officer Club) | 3” American Meter Company, Model GT-3, read monthly |
| Building 843 (Hospital WRM) | 1” Singer, Model AL 425, read monthly |
| Building 1514 (Pharmacy) | 1” Equimeter, Model R-315, read monthly |
| Building 1520 (Burger King) | 1.5” American Meter Company, Model AL-1000, read monthly |
| Building 1525 (Bowling Center) | 1.5” Rockwell, Model 1000, read monthly |
| Building 1540 (Base Exchange) | 4” Equimeter, Model T-18, read monthly |
| Building 1550 (Commissary) | 2” Equimeter, Unknown Model No. , read monthly |
| Building 177 (AAFES Service Station) | 1.25” American Meter Company, Model AL 425, read monthly |
| Building 234 (Car Wash) | 1” Rockwell, Unknown Model, read monthly |

| | |
|---|---|
| Building 750 (Officer's Club) | 1.5" Rockwell, Model 1600, read monthly |
| Building 1150 (Plaza Deli) | Unknown Model No., read monthly |
| Building 219 (Library) | Unknown Model No., not read |
| Building 289 (Vehicle Operations Admin.) | Unknown Model No., not read |
| Building 291 (Vehicle Maintenance) | Unknown Model No., not read |
| Building 408 (21st FS Maintenance Dock) | Unknown Model No., not read |
| Building 431 (62nd FS Maintenance Dock) | Unknown Model No., not read |
| Building 446 (CRS Shop Avionics) | Unknown Model No., not read |
| Building 450 (Fire Station #1) | Unknown Model No., not read |
| Building 452 (56th Fighter Wing Headquarters) | Unknown Model No., not read |
| Building 453 (Base Operations) | Unknown Model No., not read |
| Building 461 (62nd FS Squadron Operations) | Unknown Model No., not read |
| Building 485 (OSS Training Classroom) | Unknown Model No., not read |
| Building 528 (Dormitory) | Unknown Model No., not read |
| Building 530 (Dormitory) | Unknown Model No., not read |
| Building 533 (Dormitory) | Unknown Model No., not read |
| Building 545 (Dining Facility) | Unknown Model No., not read |
| Building 581 (Dormitory) | Unknown Model No., not read |
| Building 587 (Visiting Airman Quarters) | Unknown Model No., not read |
| Building 617 (Flight Simulator) | Unknown Model No., not read |
| Building 637 (Dormitory) | Unknown Model No., not read |
| Building 668 (Visiting Officer Quarters) | Unknown Model No., not read |
| Building 799 (Chapel) | Unknown Model No., not read |
| Building 820 (Fitness Center) | 3" Size, Unknown Model No., not read |
| Building 920 (Supply Warehouse) | Unknown Model No., not read |
| Building 928 (63rd FS Shop AMU) | Unknown Model No., not read |
| Building 931 (CRS Jet Engine Shop) | Unknown Model No., not read |
| Building 936 (372nd TRS Field Training Facility) | Unknown Model No., not read |
| Building 940 (Flight Simulator) | Unknown Model No., not read |
| Building 942 (308th FS Squadron Operations) | Unknown Model No., not read |
| Building 954 (Dining Facility) | Unknown Model No., not read |
| Building 962 (Survival Equipment Shop) | Unknown Model No., not read |
| Building 966 (Oil Analysis) | Unknown Model No., not read |
| Building 968 (Maintenance Dock) | Unknown Model No., not read |
| Building 976 (Squadron Operations) | Unknown Model No., not read |

| | |
|---|---|
| Building 993 (Aircraft Shop) | Unknown Model No., not read |
| Building 999 (Parachute Shop) | Unknown Model No., not read |
| Building 1018 (Storage) | Unknown Model No., not read |
| Building 1022 (Aircraft Shop) | Unknown Model No., not read |
| Building 1143 (Youth Center) | Unknown Model No., not read |
| Building 1144 (Reserve Forces Medical) | Unknown Model No., not read |

### J2.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3 and J2.6 below.

TABLE 6
New Secondary Meters
*Natural Gas Distribution System Luke AFB*

| Meter Location | Meter Description |
|---|---|
| Building 247 (Outdoor Recreation Equip. Rental) | Read monthly |
| Building 311 (Medical Warehouse) | Read monthly |
| Building 810 (Aero Medical Center) | Read monthly |
| Building 470 (U.S. Army Corps of Engineers) | Read monthly |
| Building 550 (U.S. Post Office) | Read monthly |
| Building 1515 (Base Theater) | Read monthly |

## J2.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   *Name: 56CES/CEOE*
   *Address: 13970 W. Lightning Street, Luke AFB, AZ 85309-1149*
   *Phone number:* 623-856-3781

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

*Name: 56CES/CEOE*
*Address: 13970 W. Lightning Street, Luke AFB, AZ 85309-1149*
*Phone number:* 623-856-3781

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   *Name: 56CES/CEOE*
   *Address: 13970 W. Lightning Street, Luke AFB, AZ 85309-1149*
   *Phone number:* 623-856-3781

4. System Efficiency Report. If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   *Name: 56CES/CEOE*
   *Address: 13970 W. Lightning Street, Luke AFB, AZ 85309-1149*
   *Phone number:* 623-856-3781

## J2.7 Energy Saving Projects

IAW Paragraph C.3, Requirement, the following projects have been implemented by the Government for conservation purposes.

No ESPC, DSM, or other projects have been identified.

## J2.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the LAFB boundaries.

## J2.9 Off-Installation Sites

No other off-site areas are included in the sale of the LAFB natural gas distribution system.

## J2.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
*Natural Gas Distribution System Luke AFB*

| Location | Description |
|---|---|
| None | |

# J2.11 Government Recognized System Deficiencies

**Table 8** provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the LAFB natural gas distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 8
System Deficiencies
*Natural Gas Distribution System Luke AFB*

| Project Location | Project Description |
|---|---|
| None | |